

Retrofitting buildings with LLumar® window film can help meet Minimum Energy Efficiency Standards

The application of LLumar® window film can help to improve the Energy Performance Certificate (EPC) rating of a building, with paybacks typically in less than five years¹. Since 1 April 2018, retrofitting inefficient windows with window film has also provided an option to help meet minimum energy efficiency standards².

LLumar window film is manufactured by Eastman Performance Films, LLC. To better understand the implications of the new energy efficiency regulations, the Company sought out the expertise and knowledge of energy consultant³, Andrew Cooper, a director at EVORA EDGE, the engineering division of EVORA GLOBAL. Cooper is an Incorporated Engineer, an MEI Chartered Energy Manager and a CIBSE Low Carbon Consultant and Energy Assessor to Level 5 (the highest level of accreditation). He is recognized as an expert in his field, serving on numerous advisory panels and writing for various trade and technical journals on energy and sustainability.

“ Minimum Energy Efficiency Standards⁴ – background

The Energy Efficiency (Private Rented Property; England and Wales) Regulations 2015 were made on 26 March 2015. They came into force on 1 April 2016, first affecting domestic property and then non-domestic property.

Since 1 April 2018, a non-domestic property cannot be let unless it complies with the regulations. These place a requirement on landlords to ensure their properties comply with Minimum Energy Efficiency Standards (MEES). The minimum standard is set by the Department of Business Energy and Industrial Strategy (BEIS) at an E EPC rating.

If a property fails to meet the minimum standard then an assessment must be undertaken to identify relevant energy efficiency improvements and, unless a time-limited exemption applies, these must be installed, even if the EPC rating does not improve. Only then may a property be let.

This is important because EPCs are now embedded in the property leasing cycle affecting the management and potentially the asset value of commercial property. The regulations have been well signposted and as a result, the largest landlords in the UK are being forced to reassess the energy performance of buildings.

Research for property magazine Estates Gazette found £29 billion would need to be spent by property owners on compliance, leading to a £3.9 billion annual reduction of running costs⁵.

Minimum Energy Efficiency Standards – implications for asset management

From an asset management point of view, landlords and occupiers should consider their exposure to MEES as part of their fiduciary duties – this includes both risks and opportunities.

Implications for commercial landlords include:

- The urgency to undertake relevant energy efficiency improvements from 1 April 2018
- Direct costs
- Indirect costs, as it is not always possible to undertake improvements without disruption, especially in multiple-let buildings

Planned maintenance programmes will need to be reviewed with MEES in mind to ensure buildings remain not just operational, but resilient to legislation.

¹ <http://glassmagazine.com/news-item/commercial/study-confirms-solutia-products-deliver-positive-environmental-impact-117806>, details available on request

² The applicability of MEES regulations under the Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015 must be determined on a case-by-case basis. To determine whether the MEES regulations apply to your property, please review the regulations at http://www.legislation.gov.uk/uksl/2015/962/pdfs/uksl_20150962_en.pdf and consult your legal advisors.

³ The external consultant has been financially compensated for his knowledge and expertise.

⁴ <https://www.gov.uk/government/publications/the-private-rented-property-minimum-standard-landlord-guidance-documents>

⁵ <http://www.egi.co.uk/news/landlords-face-29bn-green-refurb-bill>

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From 1 April 2023, MEES will apply to all non-domestic lettings where the property has an EPC unless an exemption applies. One of the exemptions open to landlords is where a relevant energy efficiency improvement is not cost effective within a seven-year simple payback period.

LLumar window film – a practical, sustainable and cost-effective solution to MEES

Window film can help improve the EPC rating and is suitable for those buildings where it is not cost-effective, or it is too difficult to replace existing glazing. Applying a suitable film, bespoke to the individual requirements of each building, brings many advantages:

- helps to improve occupants' productivity
- helps to reduce costs
- helps to reduce operational and embodied carbon emissions

As such, window film is a genuinely sustainable retrofit solution.

LLumar window film – the cost benefits

A typical payback period for LLumar high performance window films is often less than five years⁶ making the technology comparable to a lighting upgrade such as LED. This cost-effectiveness means window film might become mandatory under MEES. Other benefits include less expensive alternative solutions needed for compliance, such as the replacement or upgrade of Heating Ventilation and Air Conditioning (HVAC). If building services are to be replaced, window film could support a reduction in load and plant capacity leading to lower capital and operational costs.

LLumar window film – a case study

The Company engaged a Chartered Institution of Building Services Engineers (CIBSE) qualified Low Carbon Energy Assessor to model the effect of some LLumar films in SBEM and DSM formats, the two methodologies used for preparing EPCs. Different retrofit glazing solutions were applied to a notional building; the study compared new double glazing and secondary glazing with four film types.

Retrofitting the building with LLumar window film was more cost-effective than installing double or secondary glazing. In this case, based on the occupancy pattern and use of the modelled building, this resulted in a simple payback period of less than 7 years. Not only was this the most cost-effective solution in terms of direct installation costs but retrofitting film would also mean the least amount of disruption for occupiers. Retrofitting new glazing might not be possible while floors were occupied and retrofitting secondary glazing would be disruptive. ”

Next steps

The Company offers full technical support to architects, engineers and sustainability consultants seeking to model or understand the benefits of window film for retrofit and for new build properties. We can provide technical data for a variety of film types for EPC modelling in SBEM and DSM formats for most of the leading energy modelling software systems. This includes IES VE, Design Builder and EDSL TAS.

To learn more about how LLumar window film can help, please contact your LLumar representative.